CLAIMS

1. Process for the continuous hot-dip galvanizing of a steel strip (1) containing oxidizable addition elements in a proportion allowing the mechanical properties of the steel to be improved, in which process the strip passes through a galvanizing furnace (3) in a reducing atmosphere, this furnace consisting of heat treatment sections, for heating, soaking and cooling, and is then dipped into a galvanizing bath (2), the strip having been subjected to an oxidation treatment under conditions as regards temperature, duration and oxygen content of a gas in which the strip is immersed, such that the oxidizable addition elements are essentially oxidized within the strip, before they can migrate to the surface in order to form thereat a layer of oxides of a kind liable to create galvanizing defects,
characterized in that the strip is subjected to the oxidation treatment upstream of the inlet section of the furnace, in that the gas in which the strip is immersed for the oxidation treatment is air, in that this strip is heated to a temperature between approximately 150°C and 400°C for the oxidation treatment and in that the oxidation at the surface and immediately beneath the surface of the strip is controlled by controlling the temperature/time pair in such a way that the temperature of the steel strip (1) is increased when the line speed increases and the treatment time decreases, and vice versa.

2. Process according to Claim 1, characterized in that the steel strip is heated to a temperature between approximately 150°C and 300°C for the oxidation treatment.

3. Process according to Claim 1 or 2, characterized in

that the temperature is controlled by varying the power of a means (8) for heating the strip upstream of the galvanizing furnace.

4. Process according to one of Claims 1 to 3, characterized in that the oxidation treatment time is controlled by modifying the length of strip (1) between the outlet of a heating means (8) located upstream of the furnace and the inlet of the galvanizing furnace (3).

5. Process according to Claim 4, characterized in that the length of strip between the outlet of the heating means (8) and the inlet of the galvanizing furnace (3) is modified by moving the heating means (8) along the direction of the strip.

6. Process according to Claim 5, characterized in that the length of strip between the outlet of the heating means (8) and the inlet of the galvanizing furnace (3) is modified by adjusting the length of at least one vertical or horizontal strand of the strip, or a combination of the two.

7. Line for the continuous hot-dip galvanizing of a steel strip (1) containing oxidizable addition elements in a proportion allowing the mechanical properties of the steel to be improved, in which line the strip passes through a galvanizing furnace (3) in a reducing atmosphere before being dipped into a galvanizing bath (2), this line being characterized in that it comprises, upstream of the galvanizing furnace, a means (8) for heating the strip to a temperature of between approximately 150°C and 400°C, and a zone for exposing the strip to an oxidizing gas, the oxygen content of which is such that, owing to the temperature and the duration of treatment, the oxidizable addition elements in the steel strip are oxidized within

this strip before they can migrate to the surface in order to form thereat an oxide layer.

8. Galvanizing line according to Claim 7, characterized in that the heating means (8) consists of an induction furnace which also constitutes the zone for exposing the strip to an oxidation gas.

9. Galvanizing line according to Claim 7 or 8, characterized in that the heating zone (8) is sealably connected to the inlet of the furnace (3) by a chamber (13) in which the oxygen concentration may be monitored and adjusted to the treatment to be obtained.

10. Galvanizing line according to Claim 8, characterized in that the induction furnace includes at least one induction coil that can be moved closer to or further away from the galvanizing furnace in order to vary the heating rate produced.

11. Galvanizing line according to Claim 7, characterized in that the heating means consists of a gas furnace.

12. Galvanizing line according to one of Claims 7 to 11, characterized in that it includes a control means (7) suitable for acting on the heating means (8) in order to maintain the strip at a defined temperature at the outlet of the heating means, in response to information provided by sensors (4, 5, 6).